

Claim Amendments:

Claims 1 - 6 (canceled)

1           Claim 7 (new): A reactor for gasifying granular fuels,  
2   which comprises:

3                       a casing;

4                       a reservoir for holding the granular fuel and  
5   communicating with the inside of the casing;

6                       structure in said casing for defining a fixed  
7   bed of the granular fuel at a lower portion of which, an oxygen-  
8   containing gasification medium is introduced, said gasification  
9   medium moving up through said fixed bed of granular fuel;

10                      a gas inlet for said gasification medium below  
11   said bed and admitting said gasification medium to said fuel for an  
12   endothermic reaction thereof with partial oxidation;

13                      a discharge duct located above the fixed bed of  
14   granular fuel through which product gas containing hydrogen and  
15   carbon oxides is withdrawn from the reactor; and

16                      at least one centrifugal separator in said  
17   casing and at least partially surrounded in said bed for separating  
18   solids from the product gas, having an inlet opening for dust-laden  
19   product gas coming from the fixed bed of granular fuel, an outlet  
20   line for product gas, and a solid discharge line leading into the  
21   fixed bed, said outlet line from the centrifugal separator communi-  
22   cating with the discharge duct.

1           Claim 8 (new): The reactor for gasifying granular fuels  
2 defined in claim 7 wherein several centrifugal separators are  
3 disposed in the reactor and the outlet lines of the separators open  
4 into an annular chamber disposed in the upper portion of the  
5 reactor, which annular chamber communicates with the discharge  
6 duct.

1           Claim 9 (new): The reactor for gasifying granular fuels  
2 defined in claim 7 wherein in the upper portion of the reactor a  
3 vertical annular wall is provided and the inlet opening of the  
4 separator is disposed outside the portion of the reactor enclosed  
5 by the annular wall.

1           Claim 10 (new): The reactor for gasifying granular fuels  
2 defined in claim 9 wherein the separator is disposed outside the  
3 portion enclosed by the annular wall.

1           Claim 11 (new): The reactor for gasifying granular fuels  
2 defined in claim 7 wherein the centrifugal separator is a cyclone.

1           Claim 12 (new): A method of operating a reactor for  
2 gasifying granular fuels, said reactor comprising:

3                   a casing;

4                   a reservoir for holding the granular fuel and  
5 communicating with the inside of the casing;

6 structure in said casing for defining a fixed  
7 bed of the granular fuel on a rotary grate at a lower portion of  
8 which, an oxygen-containing gasification medium is introduced, said  
9 gasification medium moving up through said fixed bed of granular  
10 fuel;

11 a gas inlet for said gasification medium below  
12 said bed and admitting said gasification medium to said fuel for an  
13 endothermic reaction thereof with partial oxidation;

14 a discharge duct located above the fixed bed of  
15 granular fuel through which product gas containing hydrogen and  
16 carbon oxides is withdrawn from the reactor; and

17 at least one centrifugal separator in said  
18 casing and at least partially surrounded in said bed for separating  
19 solids from the product gas, having an inlet opening for dust-laden  
20 product gas coming from the fixed bed of granular fuel, an outlet  
21 line for product gas, and a solid discharge line leading into the  
22 fixed bed, said outlet line from the centrifugal separator communi-  
23 cating with the discharge duct, said method comprising the follow-  
24 ing steps:

25 a. adding granular fuel to the reactor by discharging  
26 the fuel from the reservoir into the bottom of the reactor above  
27 the rotary grate to form a fixed bed of the granular fuel;

28 b. introducing an oxygen-containing gasification medium  
29 through the rotary grate into the lower portion of the fixed bed of  
30 the granular fuel to distribute the gasification medium through the  
31 fixed bed granular fuel to partially oxidize the granular fuel

32 under endothermic conditions to obtain a dust-laden product gas  
33 containing hydrogen, carbon oxides, and solid particles of the  
34 granular fuel;

35 c. forcing the dust-laden product gas obtained according  
36 to step a. through the inlet opening of the centrifugal separator,  
37 at least partially surrounded by said bed, where the solid parti-  
38 cles are separated from the product gas and recirculated into the  
39 fixed bed through the solid discharge line, to obtain a product gas  
40 free of the solid particles; and

41 d. passing the product gas free of the solid particles  
42 through the outlet line of the centrifugal separator to the dis-  
43 charge duct and withdrawing the product gas from the reactor.